

# **LHMP ANNEX**

## **City of Cloverdale**

### **Introduction**

The City of Cloverdale is a small city in Sonoma County, California. The City has a population of 6,831 people, based on the 2000 census<sup>1</sup>. Last year, the City's budget was \$7,758,200. The City employs 55 people. While the City provides local police services, the fire services are supplied by a separate fire district.

### **The Planning Process**

This process of preparing this plan was familiar to the City of Cloverdale. The City has a Safety Element to its General Plan; currently undergoing a comprehensive update through a Citizen Advisory Committee process. The updated General Plan when complete later this year will include a discussion of fire, earthquake, flooding, and landslide hazards. In addition, the City routinely enforces the requirements of the California Environmental Quality Act (CEQA) requirements (which, since 1988, have required mitigation for identified natural hazards). The City's effort has focused on building on these pre-existing programs and identifying gaps that may lead to disaster vulnerabilities in order to work on ways to address these risks through mitigation.

Many of the activities conducted by the City were fed into the planning process for the multi-jurisdictional plan. The City participated in various ABAG workshops and meetings, including the general "kick-off" meeting. In addition, the City has provided written and oral comments on the multi-jurisdictional plan. Finally, the City provided information on facilities that are viewed as "critical" to ABAG.

Key City staff met on two occasions to identify and prioritize mitigation strategies appropriate for the City. Staff involved in these meetings included the City Manager, Community Development Director, Building Official, City Engineer, Assistant to the City Manager, Public Works Superintendent, and Chief of Police. At the first meeting, the general priorities and appropriate City departments were identified. The second meeting identified preliminary budgets and potential funding sources for strategies designed as "High" priority. The City provided the opportunity for the public to comment on the DRAFT mitigation strategies selected by City staff at the City Council meeting on May 25, 2005. The resolution adopting the plan and strategies was scheduled for approval by the City Council during its regular meeting July 27, 2005. The mitigation strategies will become an implementation appendix to Safety Element of the Cloverdale General Plan.

### **Hazard and Risk Assessment**

The ABAG multi-jurisdictional Local Hazardous Mitigation Plan, to which this is an Annex, lists nine hazards that impact the Bay Area, five related to earthquakes (faulting, shaking, earthquake-

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<sup>1</sup> For complete Census information on this city, see <http://www.bayareacensus.ca.gov/>.

induced landslides, liquefaction and tsunamis) and four related to weather (flooding, landslides, wildfires and drought). These hazards also impact this community, except for the surface faulting. Surface faulting is not a hazard in Cloverdale because no active faults are located within the City boundaries.

While the City has undertaken a number of general hazard mapping activities since the first Safety Element was prepared by the City, all of these maps are less detailed and are not as current as those shown on the ABAG website at <http://quake.abag.ca.gov/mitigation/>.

Information on disasters declared within Sonoma County may be found at <http://quake.abag.ca.gov/mitigation/disaster-history.html>.

The City examined the hazard exposure of Cloverdale's urban land based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 1571 urban acres in the City,

- ◆ Earthquake faulting – No active faults run within the city therefore surface rupture is not a direct concern for the City of Cloverdale.
- ◆ Earthquake shaking – 100% of the city's 1571 acres are within the highest two categories for shaking potential, this is primarily due to the fact the San Andreas fault follows the Northern California coastline along the city's western perimeter approximately fifteen aeronautical miles from the city limits at the closet point.
- ◆ Earthquake-induced landslides – The California Geological Survey has not completed mapping of this hazard in the City of Cloverdale. However because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by other weather related hazards.
- ◆ Earthquake liquefaction – Of the city's 1571 acres, only 116 or 7% are within the areas of high or very high liquefaction susceptibility and therefore does not represent a significant exposure.
- ◆ Tsunamis – While tsunamis may be considered a hazard for the City of Cloverdale, the mapping of inundation areas has not been completed at this time. Although the Pacific Coastline is approximately twenty aeronautical miles due West of the city boundaries, the city is separated and protected by a natural mountainous border with elevation in excess of one thousand feet. Therefore tsunamis are not a direct concern.
- ◆ Flooding – One-hundred & twelve (112) acres of the city is located in the 100 year flood plain.
- ◆ Landslides – Seventy (70) acres are located within the mostly landslide terrain area.
- ◆ Wildfires – The City of Cloverdale has (151) acres subject to high or very high wildfire threat, however approximately 65% or 1071 acres are within the wildland-urban interface threat zone.
- ◆ Dam Inundation – Cloverdale had one hundred forty-seven (147) acres subject to dam inundation.
- ◆ Drought – All 1571 acres may be subject to drought conditions.

The City also examined the hazard exposure of infrastructure based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickdbh2.html>. Of the 41 miles of roadway in the City,

- ◆ Earthquake faulting – No active faults run within the city therefore surface rupture is not a direct concern for the City of Cloverdale.
- ◆ Earthquake shaking – All 41 miles roadway are within the highest three categories for shaking potential.
- ◆ Earthquake-induced landslides – The California Geological Survey has not completed mapping of this hazard in the City of Cloverdale. However because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by other weather related hazards.
- ◆ Earthquake liquefaction – One mile of City roadway is within the area of very high liquefaction susceptibility.
- ◆ Tsunamis – While tsunamis may be considered a hazard for the City of Cloverdale, the mapping of inundation areas has not been completed at this time. Although the Pacific Coastline is approximately twenty aeronautical miles due West of the city boundaries, the city is separated and protected by a natural mountainous border with elevation in excess of one thousand feet. Therefore tsunamis are not a direct concern.
- ◆ Flooding - Three (3) miles of roadway are located in the 100 year flood plain.
- ◆ Landslides – One (1) mile of roadway is located in the highest potential landslide area and an additional five (5) miles are located within areas of few landslides.
- ◆ Wildfires – The City of Cloverdale has (1) mile of roadway subject to high wildfire threat, while an additional (28) miles are within the wildland-urban interface threat zone.
- ◆ Dam Inundation – the City has (1) mile of road subject to dam inundation.
- ◆ Drought – Is not identified as a hazard for roadways.

Finally, the City examined the hazard exposure of critical health care facilities, schools, and city-owned buildings based on the information on ABAG's website at <http://quake.abag.ca.gov/mitigation/pickcrit.html>. Of the critical facilities in the City,

- ◆ Earthquake faulting – No active faults run within the city therefore surface rupture is not a direct concern for the City of Cloverdale.
- ◆ Earthquake shaking – Two health care facilities, eight (8) schools, fire & police stations, city hall and all thirty-four (34) other critical facilities owned & operated by the City of Cloverdale are within the highest three categories for shaking potential.
- ◆ Earthquake-induced landslides – The California Geological Survey has not completed mapping of this hazard in the City of Cloverdale. However because few areas have been mapped as landslides, this hazard is viewed as similar to that posed by other weather related hazards.
- ◆ Earthquake liquefaction – Two health care facilities, six (6) schools and thirty-four (34) facilities owned by the City or the County are within the areas of low to very low liquefaction susceptibility. However four (4) critical City facilities and one (1) bridge/interchange are located in the area of very high susceptibility.
- ◆ Tsunamis – While tsunamis may be considered a hazard for the City of Cloverdale, the mapping of inundation areas has not been completed at this time. Although the Pacific Coastline is approximately twenty aeronautical miles due West of the city

boundaries, the city is separated and protected by a natural mountainous border with elevation in excess of one thousand feet. Therefore tsunamis are not a direct concern.

- ◆ Flooding - Two health care facilities, six (6) schools, fire & police stations, city hall and thirty-two (32) other facilities owned & operated by the City of Cloverdale are not located in an identified flood threat zone. However four (4) critical city facilities and one (1) bridge/interchange are located in the 100 year flood plain.
- ◆ Landslides – Two health care facilities, eight (8) schools, fire & police stations, city hall and thirty-two (32) other facilities owned & operated by the City of Cloverdale are located in the few to very few landslide areas. However two (2) critical city facilities are located in the most likely landslide areas.
- ◆ Wildfires – The City of Cloverdale has (4) facilities subject to high wildfire threat, however two health care facilities, four (4) schools, eighteen (18) other facilities and two (2) bridges/interchanges are located are within the wildland-urban interface threat zone.
- ◆ Dam Inundation – the City does have four (4) critical facilities and one (1) bridge/interchange located in areas subject to dam inundation.
- ◆ Drought – City buildings and other facilities are not affected by drought conditions, however the city does operate a water distribution system.

In spite of the areas of the City located in flood-prone areas, there are no repetitive loss properties in the City based on the information at <http://quake.abag.ca.gov/mitigation/pickflood.html>.

The City plans to work with ABAG during 2005 to improve the risk assessment information being compiled by ABAG by providing information on unreinforced masonry buildings and soft-story apartments located in the City.

Drought, though a potential problem in the City, is not fully assessed. The City will work with ABAG, the Russian River Watershed Association and various water supply agencies on this issue.

The City plans to work with ABAG to develop specific information about the kind and level of damage to buildings, infrastructure, and critical facilities which might result from any of the hazards previously noted. The ABAG Annex states that ABAG will be doing this work in 2005 through early 2006.

As these impacts are not fully developed, the City has reviewed the hazards identified and ranked the hazards based on past disasters and expected future impacts. The conclusion is that earthquakes (particularly shaking), flooding, wildfire, and landslides (including unstable earth) pose a significant risk for potential loss.

## **Mitigation Activities and Priorities**

As a participant in the ABAG multi-jurisdictional planning process, City of Cloverdale staff helped in the development and review of the comprehensive list of mitigation strategies in the overall multi-jurisdictional plan. The list was discussed at a meeting of the City Manager, Community Development Director, Building Official, City Engineer, Assistant to the City

Manager, Public Works Superintendent, and Chief of Police on May 2, 2005. In addition, representatives of the fire district were invited to this meeting, but chose not to attend. At the meeting, all of the mitigation strategies were reviewed. The tentative decision on priority was made based on a variety of criteria, not simply on an economic cost-benefit analysis. These criteria include being technically and administratively feasible, politically acceptable, socially appropriate, legal, economically sound, and not harmful to the environment or our heritage.

Over time, we are committed to developing better hazard and risk information to use in making those trade-offs. We are not trying to create a disaster-proof region, but a disaster-resistant one. In addition, several of the strategies are existing City programs.

These draft priorities were submitted to the City Manager for review. The draft priorities were then provided to the City Council on May 25, 2005. The public was provided with an opportunity to comment on the DRAFT priorities. The final strategies (as shown in the attached Table) will become an *Implementation Appendix* to the City's *Safety Element*.

In addition, the City examined the hazard exposure information to City-owned critical facilities supplied by ABAG. The City determined that the combination of construction type, age, and shaking exposure to Fire Station was significant. The City completed a retrofit this fire station in 2004. The City previously completed a similar retrofit of its City Hall in 1998.

While there are currently no strategies with a "High" priority, this may change. Several of the strategies in the "Government" section are "Not Yet Considered" or "Under Study." One or more of these strategies may become a "High" priority.

## **The Plan Maintenance and Update Process**

The City Community Development Director will ensure that *monitoring* of this Annex will occur. The plan will be monitored on an on-going basis. However, the major disasters affecting our community, legal changes, notices from ABAG as the lead agency in this process, and other triggers will be used. Finally, the Annex will be a discussion item on the agenda of the meeting of City department heads at least once a year in April. At that meeting, the department heads will focus on *evaluating* the Annex in light of technological and political changes during the past year or other significant events. This group will be responsible for determining if the plan should be updated.

The City of Cloverdale is committed to reviewing and updating this plan annex at least once every five years, as required by the Disaster Mitigation Act of 2000. The City Community Development Director will contact ABAG four years after this plan is approved to ensure that ABAG plans to undertake the plan update process. If so, the City again plans to participate in the multi-jurisdictional plan. If ABAG is unwilling or unable to act as the lead agency in the multi-jurisdictional effort, other agencies will be contacted, including the County's Office of Emergency Services. Counties should then work together to identify another regional forum for developing a multi-jurisdictional plan.

The *public* will continue to be involved whenever the plan is updated, and as appropriate during the monitoring and evaluation process. Prior to adoption of updates, the City will provide the

opportunity for the public to comment on the updates. A public notice will be posted prior to the meeting to announce the comment period and meeting logistics.